



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4

Science and Ecosystem Support Division
Enforcement and Investigations Branch
980 College Station Road
Athens, Georgia 30605-2720

September 23, 2011

4SESD-EIB

MEMORANDUM

SUBJECT: QAPP Transmittal, Read Avenue Lead Site Removal Assessment, Chattanooga, Tennessee; SESD Project Identification Number: 12-0031

FROM: Donald Hunter, Regional Expert
Air and Superfund Section

A handwritten signature in black ink, appearing to read "Donald Hunter", is written over the "FROM:" line.

THRU: Laura Ackerman, Section Chief
Superfund and Air Section

A handwritten signature in blue ink, appearing to read "Laura", is written over the "THRU:" line.

TO: Perry Gaughan, On-Scene Coordinator
Emergency Response and Removal Branch
Superfund Division

Please find attached two copies of the Quality Assurance Project Plan (QAPP) for the Read Avenue Lead Site Removal Assessment to be conducted during October 12-14, 2011. This QAPP addresses all concerns, expected content and issues raised during our reconnaissance with representatives of the Tennessee Department of Environment and Conservation in August. Please contact me at your earliest convenience if you have any questions regarding this report. I can be reached at hunter.don@epa.gov or (706) 355-8605.




Attachments

cc: Troy Keith, Tennessee Department of Environment and Conservation



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U.S. Environmental Protection Agency
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SESD Project ID No.: 12-0031
 SESD Category 3 QAPP

SECTION A: Project Planning Elements		
A1. Title (Project Name):	Read Avenue Lead Site Removal Assessment	
Project Location:	Read Avenue and E. 17 th Street and Vicinity Chattanooga, Tennessee	
Project Requestor and Organization:	Perry Gaughan, On-Scene Coordinator Region 4 EPA, Emergency Response and Removal Branch Superfund Division 61 Forsyth St. SW Atlanta, Georgia 30303-8960	
Project Leader's Name, Position, and Organization:	Donald Hunter, Regional Expert Superfund and Air Section Enforcement and Investigations Branch	
Project Leader's Signature:		Date: 9/22/11
Technical Reviewer's Name and Position:	Tim Simpson, Environmental Scientist	
Technical Reviewer's Signature:		Date: 9/22/11
Section Chief's Name and Position:	Laura Ackerman, Chief Superfund and Air Section	
Section Chief's Signature:		Date: 09/22/11
A2. Table of Contents	N/A	
A3. Distribution List	Perry Gaughan, OSC Troy Keith, Tennessee Department of Environment and Conservation	
A4. Project Personnel	Organization	Responsibilities
Donald Hunter	Superfund and Air Section, EIB, SESD	Proj. Leader, Sampler
Kevin Simmons	Superfund and Air Section, EIB, SESD	Sampler, SSO
Linda George	Superfund and Air Section, EIB, SESD	Sampler
Landon Pruitt	Superfund and Air Section, EIB, SESD	Sampler
ILS Staff, to be assigned	Integrated Laboratory Systems, Inc.	Scribe, Sampler



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**A5. Problem Definition –
Investigation Objectives
and Background
Information:**

On May 2, 2011, representatives of Region 4, United States Environmental Protection Agency (EPA) conducted a soil sampling investigation at the Read Avenue Lead Site in Chattanooga, Tennessee. The site is located in the blocks immediately surrounding and in the vicinity of the intersection of Read Avenue and East 17th Street, in the southeast area of downtown Chattanooga. Figure 1, Site Location Map, attached, shows the location and boundary of the site, as defined for this investigation.

Samples collected during the May 2, 2011 investigation indicated that surface soils, collected within the 0" to 6" below ground surface interval, were contaminated with lead at levels that exceed the Region 4 EPA Removal Action Level of 400 mg/kg. Samples collected at the residence located at 1707 Read Avenue ranged from 580 mg/kg, in the backyard sample, to a high of 2,500 mg/kg in the sample collected from the front yard. It was detected at concentrations of 300 mg/kg in two other samples, both collected at 1701 Read Avenue. As these were composite soil samples, it is reasonable that at least one of the aliquots at each of the two locations may have also contained lead at concentrations exceeding 400 mg/kg.

At each of the locations where the RAL for lead was exceeded, a dark, black, material, presumed to be foundry sand or slag (or a mixture of both) and possibly small pieces of coal, was present from about two inches below ground surface to the bottom of the sampling interval. Foundry sand, in particular, is known at times to contain lead at high concentrations. Each of the yards where the black material was seen were elevated above street level and were contained behind retaining walls, generally constructed with cut limestone blocks. Approximately 45 houses, or about half of the houses present in this neighborhood, have similar yards, where the property on which the houses were constructed have retaining walls constructed at the sidewalks, behind which is generally an average of about three feet of fill. The fill has a range of thickness from one to about five feet. The presumption is that foundry sand or slag, or other industrial byproducts, is present beneath many of the properties with retaining walls.

The objective of this investigation is to characterize approximately 25 properties with respect to lead and arsenic concentrations in surface soil, as well as describe the presence, both in terms of lead and arsenic



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	<p>concentrations and presence of and nature of fill in the 0" to 36" below ground surface interval. Table 1, p. 8, list the residences selected for sampling, along with alternate locations if access cannot be obtained from the primary location. Figure 2, Sample Location Map shows the primary sample locations.</p>
<p>A6. Project Description:</p>	<p>At each residence, two grab surface soil samples, representing the 0" to 6" below ground surface interval, will be collected. One sample will be collected from a location in the front yard and one from a location in the back yard. The material comprising each sample will be described in detail. Additionally, the material present to a total depth of 36 inches below ground surface below the sampled interval will also be described in detail.</p> <p>Each sample will be analyzed for lead and arsenic and the reported concentrations compared to EPA Removal Action Levels for each metal.</p> <p>The locations of all samples will be logged and recorded with a Trimble GeoXT mapping grade global positioning system unit.</p>
<p>Applicable regulatory information, action levels, etc.</p>	<p>EPA Removal Action Levels: Lead – 400 mg/kg Arsenic – 39 mg/kg</p>
<p>Decision(s) to be made based on data:</p>	<p>Based on reported surface soil concentrations and physical observations of material encountered during sampling, are any of the sampled properties possible candidates for a removal action.</p>
<p>Field Study Date:</p>	<p>October 11-13, 2011</p>
<p>Projected Lab Completion Date:</p>	<p>December 2, 2011</p>
<p>Projected Final Report Completion Date:</p>	<p>December 23, 2011</p>
<p>A7. Quality Objectives and Criteria All samples/sample locations meet the field investigation objectives and purposes summarized in Sections A5 and A6 of this QAPP.</p>	



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A8. Special Training/Certifications

N/A.

A9. Documents and Records

For this project, SESD will implement the following procedures pertaining to Documents and Records:

SESD Operating Procedure for Report Preparation and Distribution, SESDPROC-003-R3.

SESD Operating Procedure for Logbooks, SESDPROC-010-R4.

SESD Operating Procedure for Control of Records, SESDPROC-002-R5.

SECTION B: Data Generation and Acquisition

B1. Sampling Design

The following matrix lists the proposed numbers and types of samples to be collected. Sample locations are described in Section A6 of this QAPP.

Media:	Number of Samples:	Analyses:
Soil	60	Lead and Arsenic

B2. Sampling Methods, General Procedures

The following SESD field measurement and sampling procedures will be followed during this field study, as applicable:

Logbooks, SESDPROC-010-R4

Field Sampling Quality Control, SESDPROC-011-R3

Global Positioning System, SESDPROC-110-R3

Field Cleaning and Decontamination, SESDPROC-205-R1

Soil Sampling, SESDPROC-300-R1

Specifically, samples will be collected as grab samples from the 0" to 6" below ground surface interval using a stainless steel hand auger and placed in a glass mixing pan. The sample will be mixed using the quartering method and then will be placed in an 8 oz. wide-mouth glass jar. Following sample collection, a visual description of the material from 6" to 36" below ground surface will be entered into the field logbook.



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B3. Sampling Handling and Custody

All samples will be collected and handled according to the procedures listed in Section B2 of this QAPP. After collection, samples will managed according to the following:

SESD Analytical Support Branch Laboratory Operations and Quality Assurance Manual, January 2010.

SESD Operating Procedure for Sample and Evidence Management, SESDPROC-005-R1.

SESD Operating Procedure for Packing, Labeling and Shipping of Environmental and Waste Samples SESDPROC-209-R1.

B4. Analytical Methods

The following is a brief description of the analytical methods for this field investigation.

SESD:	
CLP:	Samples will be analyzed by CLP laboratory using the most current Statement of Work.
Other:	

B5. Quality Control

The following is a brief description of field and laboratory quality control measures to be implemented during this field investigation.

Field:	<p>Field quality control measures will be in accordance with the <i>SESD Operating Procedure for Field Sampling Quality Control</i>, SESDPROC-011-R3, and/or <i>40 CFR Part 136.3, Table II-Required Containers, Preservation Techniques, and Holding Times</i>, as applicable.</p> <p>The number and type of field quality control samples proposed for this investigation are as follows:</p> <p>Five co-located variability duplicate samples will be collected at locations to be determined in the field. These will be collected from points located ten feet from the primary sample location. The sample team leader will determine the location of this duplicate, based on characteristics of the yard, and will record an approximate azimuth to the duplicate sample from the primary sample location.</p>
Laboratory:	<p>Specific laboratory quality control measures are specified in the <i>SESD Analytical Support Branch Laboratory Operations and Quality Assurance Manual</i>, July 2011.</p>



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	Up to four samples will be designated for matrix spike/matrix spike duplicate purposes. No extra volume will be required.
<p>B6. Instrument/Equipment Testing, Inspection and Maintenance</p> <p>All field measurement instruments and equipment will be maintained in accordance with the <i>SESD Operating Procedure for Equipment Inventory and Management</i>, SESDPROC-108-R3.</p>	
<p>B7. Instrument/Equipment Calibration and Frequency</p> <p>All field measurement instruments and equipment are calibrated according to the <i>SESD Operating Procedure for Equipment Inventory and Management</i>, SESDPROC-108-R3 and according to specific procedures included within the defined operating procedures for each instrument (see specific field measurement procedures in Section B2 of this QAPP).</p>	
<p>B8. Inspection/Acceptance for Supplies and Consumables</p> <p>All critical supplies and consumables for this field investigation are inspected and maintained in accordance with the following procedures:</p> <p><i>SESD Operating Procedure for Purchasing of Services and Supplies</i>, SESDPROC-015-R3. <i>SESD Operating Procedure for Equipment Inventory and Management</i>, SESDPROC-108-R3 <i>SESD Operating Procedure for Field Sampling Quality Control</i>, SESDPROC-011-R3.</p> <p>The SESD Field Quality Manager and the Branch Quality Assurance Officers are responsible for ensuring that these requirements are met.</p>	
<p>B9. Non-direct Measurements: N/A for this category.</p>	
<p>B10. Data Management</p> <p>The field project leader will be responsible for ensuring that all requirements for data management are met. All data generated for this field investigation, whether hand-recorded or recorded and stored in an electronic data logger will be recorded, stored and managed according to the following procedures:</p> <p><i>SESD Operating Procedure for Control of Records</i>, SESDPROC-002-R5. <i>SESD Operating Procedures for Logbooks</i>, SESDPROC-010-R4.</p>	



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SECTION C: Assessment/Oversight and SECTION D: Data Validation/Usability

The SEDS *Field Branches Quality Management Plan* (QMP) and the SEDS Operating Procedures address the Assessment/Oversight and Data Validation/Usability elements as required. Please consult those documents for more detailed information concerning the SEDS Field Branches Quality System.

****Footnotes:** This Quality Assurance Project Plan (QAPP) has been prepared and approved according to the EPA *Requirements for Quality Assurance Project Plans* (EPA QA/R5 EPA/240/B-01/003), U.S. Environmental Protection Agency, Office of Environmental Information, Washington, DC, March 2001 (USEPA, 2001). This document will be used to ensure that the environmental data collected for this project are of the type and quality for the intended purposes. **This document is for SEDS use only.**



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Table 1
 List of Sample Locations and Backups
 Read Avenue Lead Removal Assessment
 Chattanooga, Tennessee

<u>Sample Location</u>	<u>Back-up Location</u>
1514 Mitchell	1518 Mitchell
1603 Mitchell	1605 Mitchell
1608 Mitchell	1610 Mitchell
1613 Mitchell	1615 Mitchell
1703 Mitchell	1701 Mitchell
1714 Mitchell	1708 Mitchell
1715 Mitchell	1719 Mitchell
1725 Mitchell	1723 Mitchell
1731 Mitchell	1733 Mitchell
1732 Mitchell	1730 Mitchell
1615 Read	OK
1618 Read	1622 Read
1623 Read	1621 Read
1700 Read	1704 Read
1706 Read	1704 Read
1709 Read	1707 Read
1717 Read	1715 Read
24 16 th Street	69 17 th Street
1508-1512 E. 16 th	Across street
1510-1514 E. 16 th	Across street
1516-1518 E. 16 th	Across street
218 E. Main	OK
218 E. Main	OK



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